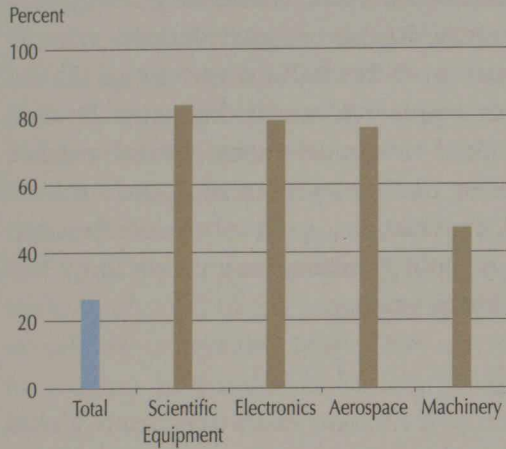


Share of Canadian Exports by Air to Non-U.S. Destinations*, 2008



* By Value.

Data: Statistics Canada and Transport Canada.

the net economic effect is that faster shipping times yield lower transportation costs—because “time is money.” Hummels (2001, 2007) also shows that while containerization use increased, the use of air transportation to ship goods was also rising dramatically as its price declined. The share (by value) of Canadian trade that occurs by air has increased substantially. In 2008, more than one quarter of Canadian exports (by value) to non-U.S. destinations occurred by air. And, this is somewhat understated due the high proportion of resources in Canadian exports, which are generally shipped by sea. The share is substantially higher for more manufactured products, with those sectors that posted the fastest growth in trade in intermediate goods also showing a particularly high use of air transport. The evidence therefore suggests that speed of transport has played an important role in the global fragmentation of production, at least with respect to intermediate goods. Evidence has yet to be established for such a link with respect to services, although services involving the movement of people primarily by air would certainly witness a similar effect.

The case for the role of information and communications technologies (ICTs) is equally complex. The special feature included in the 2007 State of Trade report also provided information on telecommunications which illustrated a dramatic fall in telecommunications costs with a particularly sharp decline in recent years. Hillberry (2011) investigates the relationship between telecommunications and information technologies and GVCs. His model is based on that of Jones and Kierzkowski (1990) in which these services are treated as complements to imported intermediate inputs. By linking those sectors that make use of ICT services through input-output tables he is able to compare the usage of ICT services with resulting fragmentation of production. Hillberry, however, is not able to find convincing empirical evidence that ICTs drove fragmentation of production.

Interestingly, Hillberry does find that the entrance of new countries into the global economy, and of formerly communist countries in particular, seems to be an important factor driving the fragmentation of production. He hypothesizes that what may have been most important was the unique characteristics of these countries, namely their relatively low wages but high levels of education, especially in technical fields. But he also notes that this effect had largely run its course by 1996.

Although their transition from closed to open economies was less demarcated, the opening of such economies as India or Brazil would have likely played a similar role in the rise of GVCs. In these cases, as well as for the formerly communist countries, the removal of tariff and non-tariff barriers are an important component of “opening”. Baier and Bergstrand (1999), for example, find that reductions in tariff rates were three to four times as important for the growth of global trade as were declining transport costs. Tariff